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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,473	03/23/2004	Igor A. Krichtafovitch	WO-432.005 CON	1707

7590 11/13/2006

Fulbright & Jaworski L.L.P.
801 Pennsylvania Avenue, N.W.
Washington, DC 20004-2623

EXAMINER	
TRAN, CHUC	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/806,473	KRICHTAFOVITCH ET AL.	
	Examiner	Art Unit	
	Chuc D. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/01/04,03/01/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 20-46 are withdrawn in view of the newly discovered reference(s) to Krichtafovitch et al (USP. 7,053,565) . Rejections based on the newly cited reference(s) follow.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 20-46 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 25, 32-36 and 38-57 of U.S. Patent No. 7,053,565. Although the conflicting claims are not identical, they are not patentably distinct from each other because in claim 20, Krichtafovitch disclose an electrostatic fluid accelerator, comprising: a first array of corona discharge electrodes disposed in a first plane; a second array of corona discharge electrodes disposed in a second plane, said second plane being parallel to and spaced a

part from said first plane; and a third array of accelerating electrodes disposed in a third plane, said third plane being parallel to said first and second planes and disposed therebetween, wherein each accelerating electrode of said third array is disposed in a staggered configuration with respect to said corona discharge electrodes of said first array (See Krichtafovitch (565), claim 25, Col. 12, Line 55); wherein a spacing between each corona discharge electrode of said second array and a nearest accelerator electrode of said third array is within the range of 1.2 to 2 times a spacing between each corona discharge electrode of said first array and a nearest accelerator electrode of said third array (See Krichtafovitch (565), claim 32, Col. 13, Line 27).

Claim 21, Krichtafovitch disclose that said spacing between each corona discharge electrode of said second array and a nearest accelerator electrode of said third array is within the range of 1.2 to 1.65 times said spacing between each corona discharge electrode of said first array and a nearest accelerator electrode of said third array (See Krichtafovitch (565), claim 33).

Claim 22, Krichtafovitch disclose that said spacing between each corona discharge electrode of said second array and a nearest accelerator electrode of said third array is approximately 1.4 times said spacing between each corona discharge electrode of said first array and a nearest accelerator electrode of said third array (See Krichtafovitch (565), claim 34).

Claim 23, Krichtafovitch disclose an electrostatic fluid accelerator, comprising:

a first array of corona discharge electrodes disposed in a first plane; a second array of corona discharge electrodes disposed in a second plane, said second plane being parallel to and spaced apart from said first plane; a third array of accelerating electrodes disposed in a third plane, said third plane being parallel to said first and second planes and disposed therebetween, wherein each accelerating electrode of said third array is disposed in a staggered configuration

with respect to said corona discharge electrodes of said first array (See Krichtafovitch (565), claim 25); and a forth array of accelerating electrodes disposed longitudinally in a forth plane, said forth plane being parallel to said first, second, and third planes and disposed on an opposite side of said second array than is said third plane, wherein each accelerating electrode of said forth array is disposed in a staggered orientation with respect to said corona discharge electrodes of said second array (See Krichtafovitch (565), claim 35);.

Claim 24, Krichtafovitch disclose an electrostatic fluid accelerator comprising: a first array of corona discharge electrodes disposed in a first plane; a second array of corona discharge electrodes disposed in a second plane, said second plane being parallel to and spaced a part from said first plane; a third array of accelerating electrodes disposed in a third plane, said third plane being parallel to said first and second planes and disposed therebetween, wherein each accelerating electrode of said third array is disposed in a staggered configuration with respect to said corona discharge electrodes of said first array (See Krichtafovitch (565), claim 25); and a high voltage power supply circuit coupled to said first and third arrays, wherein a high voltage waveform provided to corona discharge electrodes of said first array is synchronized with a high voltage waveform provided to corona discharge electrodes of said second array (See Krichtafovitch (565), claim 36).

Claim 25, Krichtafovitch disclose that said high voltage waveform provided to said first array is syn-phased with said high voltage waveform provided to said second array(See Krichtafovitch (565), claim 41).

Claim 26, Krichtafovitch disclose that said high voltage power supply circuit comprises:

a first high voltage power supply coupled to said first array; a second high voltage power supply coupled to said second array; and control circuitry coupled to said first and second high voltage power supplies and operable to control each said high voltage power supply to generate synchronized and synphased high voltage waveforms (See Krichtafovitch (565), claim 42).

Claim 27, Krichtafovitch disclose an electrostatic fluid accelerator system having a plurality of closely spaced electrostatic accelerator stages, said system comprising: a first electrostatic accelerator stage having a first array of corona discharge electrodes disposed in a first plane and a first array of accelerating electrodes disposed in a second plane; and a second electrostatic accelerator stage having a second array of corona discharge electrodes disposed in a third plane and a second array of accelerating electrodes disposed in a forth plane, wherein each corona discharge electrode of said second array of corona discharge electrodes is disposed offset from each accelerating electrode of said first array of accelerating electrodes (See Krichtafovitch (565), claim 38).

Claim 28, Krichtafovitch disclose that each of said first, second, third, and forth planes are parallel (See Krichtafovitch (565), claim 39).

Claim 29, Krichtafovitch disclose that a high voltage power supply circuit coupled to said first and second arrays of corona discharge electrodes, wherein a high voltage waveform provided to said first array of corona discharge electrodes is synchronized with a high voltage waveform provided to said second array of corona discharge electrodes (See Krichtafovitch (565), claim 40).

Claim 30, Krichtafovitch disclose that said high voltage waveform provided to said first array of corona discharge electrodes is syn-phased with said high voltage waveform provided to said second array of corona discharge electrodes (See Krichtafovitch (565), claim 41).

Claim 31, Krichtafovitch disclose that said high voltage power supply circuit comprises: a first high voltage power supply coupled to said first array of corona discharge electrodes; a second high voltage power supply coupled to said second array of corona discharge electrodes; and control circuitry coupled to said first and second high voltage power supplies and operable to control each said high voltage power supply to generate synchronized high voltage waveforms (See Krichtafovitch (565), claim 42).

Claim 32, Krichtafovitch disclose that each accelerating electrode of said first array of accelerating electrodes is disposed offset from each corona discharge electrode of said first array of corona discharge electrodes (See Krichtafovitch (565), claim 43).

Claim 33, Krichtafovitch disclose that each accelerating electrode of said second array of accelerating electrodes is disposed offset from each corona discharge electrode of said second array of corona discharge electrodes (See Krichtafovitch (565), claim 44).

Claim 34, Krichtafovitch disclose that corona discharge electrodes of said first array of corona discharge electrodes are disposed in alignment with corona discharge electrodes of said second array of corona discharge electrodes (See Krichtafovitch (565), claim 45).

Claim 35, Krichtafovitch disclose that a spacing between said corona discharge electrode of said first array of corona discharge electrodes and said accelerating electrodes of said first array of accelerating electrodes is a first distance, said first distance being greater than an intra-

stage electrode spacing as measured along a line normal to each first and second planes (See Krichtafovitch (565), claim 46).

Claim 36, Krichtafovitch disclose that a spacing between each corona discharge electrode of said second array of corona discharge electrodes and said accelerating electrodes of said first array of accelerating electrodes is a second distance, said second distance being greater than an inter-stage electrode spacing as measured along a line normal to each said second and third planes, said second distance being greater than said first distance (See Krichtafovitch (565), claim 47).

Claim 37, Krichtafovitch disclose that said second distance is in the range of 1.2 to 2 times said first distance (See Krichtafovitch (565), claim 48).

Claim 38, Krichtafovitch disclose that said first distance is selected as a function of a corona onset voltage between said corona discharge electrodes of said first array of corona discharge electrodes and said accelerating electrodes of said first array of accelerating electrodes (See Krichtafovitch (565), claim 49).

Claim 39, Krichtafovitch disclose that said second distance is selected to prevent a back corona between said second electrostatic accelerator stage and said first electrostatic accelerator stage (See Krichtafovitch (565), claim 50).

Claim 40, Krichtafovitch disclose a method for providing an electrostatic fluid accelerator, said method comprising: determining an intra-stage spacing to facilitate a corona onset voltage between corona discharge electrodes and accelerating electrodes of an electrostatic fluid accelerator while minimizing sparking between said corona discharge electrodes and said accelerating electrodes; determining an inter-stage spacing to prevent a back corona forming

between accelerating electrodes of a first electrostatic accelerator stage and corona discharge electrodes of a second electrostatic accelerator stage, said inter-stage spacing being within the range of 1.2 to 2.0 times said intra-stage spacing; disposing said accelerating electrodes of said first electrostatic accelerator stage in a first plane; and disposing said corona discharge electrodes of said second electrostatic accelerator stage in a second plane, wherein said first and second planes are parallel, and wherein a spacing between said first and second planes is less than said inter-stage spacing (See Krichtafovitch (565), claim 51).

Claim 41, Krichtafovitch disclose that said disposing said corona discharge electrodes of said second electrostatic accelerator stage in said second plane comprises:
disposing said corona discharge electrodes parallel to and in an offset configuration with said accelerating electrodes (See Krichtafovitch (565), claim 52).

Claim 42, Krichtafovitch disclose that disposing corona discharge electrodes of said first electrostatic accelerator stage is a third plane, wherein said first, second, and third planes are parallel, and wherein a spacing between said first and third planes is less than said intra-stage spacing (See Krichtafovitch (565), claim 53).

Claim 43, Krichtafovitch disclose that said disposing said corona discharge electrodes of said first electrostatic accelerator stage in said third plane comprises:
disposing said corona discharge electrodes of said first electrostatic accelerator stage parallel to and in-line with said corona discharge electrodes of said second electrostatic accelerator stage and parallel to and in an offset configuration with said accelerating electrodes of said first electrostatic accelerator stage (See Krichtafovitch (565), claim 54).

Claim 44, Krichtafovitch disclose that providing said first electrostatic accelerator stage having a first array of corona discharge electrodes and a first array of accelerating electrodes comprising said accelerating electrodes of said first electrostatic accelerator stage, wherein said providing said first electrostatic accelerator stage includes spacing each corona discharge electrode of said first array of corona discharge
electrodes apart from said accelerating electrodes of said first array of accelerating electrodes said intra-stage spacing; providing a second electrostatic accelerator stage having a second array of accelerating electrodes and a second array of corona discharge electrodes comprising said corona discharge electrodes of said second electrostatic accelerator stage, wherein said providing said second electrostatic accelerator stage includes spacing each corona discharge electrode of said second array of corona discharge electrodes apart from said accelerating electrodes of said second array of accelerating electrodes said intra-stage spacing (See Krichtafovitch (565), claim 55).

Claim 45, Krichtafovitch disclose that exciting said first electrostatic accelerator stage and said second electrostatic accelerator stage with a synchronized high voltage waveform (See Krichtafovitch (565), claim 56).

Claim 46, Krichtafovitch disclose that syn-phasing said high voltage waveform such that a potential difference between said first array of corona discharge electrodes and said second array of corona discharge electrodes is maintained substantially constant (See Krichtafovitch (565), claim 57).

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
November 03, 2006

THO PHAN
PRIMARY EXAMINER